What is claimed is:

1. An equalizing apparatus for use in equalizing a received signal, comprising:

an equalizer including a plurality of adjustable tap weights that equalizes the received signal based on values of the adjustable tap weights;

a tap weight update calculation unit coupled to the equalizer and adapted to determine tap weight updates for use in adjusting the tap weights during operation of the equalizer;

an offset memory that stores one or more tap weight update offset values; and

a summer coupled to the tap weight update calculation unit and to the offset memory, wherein the summer is adapted to combine each of the tap weight updates with one of the tap weight update offset values to produce a modified tap weight update and wherein the summer is coupled to the equalizer to provide the modified tap weight updates to the equalizer to adjust the tap weights.

2. The equalizing apparatus of claim 1, wherein the tap weight update calculation unit implements a zero forcing algorithm to produce the tap weight updates.

3. The equalizing apparatus of claim 1, further including a demodulator coupled to the equalizer and wherein the tap weight update calculation unit is coupled to the equalizer through the demodulator.

4. The equalizing apparatus of claim 3, wherein the demodulator produces a demodulated signal and further including a decision unit coupled to the demodulator which decodes the demodulated signal.

5. The equalizing apparatus of claim 4, further including an analog-to-digital converter coupled between the demodulator and the decision unit.

6. The equalizing apparatus of claim 4, further including an analog-to-digital converter coupled between the tap weight update calculation unit and the demodulator.

7. The equalizing apparatus of claim 1, further including a decision unit coupled to the equalizer to decode an output of the equalizer to produce a decoded signal and an offset calculation unit coupled to the decision unit and the offset memory, wherein the offset calculation unit includes first programming stored in a programming memory which, when run on a processor, is adapted to compute the one or more tap weight update offset values and to store the one or more tap weight update offset values in the offset memory.

8. The equalizing apparatus of claim 7, wherein the offset calculation unit includes dithering programming which is adapted to dither the tap weights within the equalizer.

9. The equalizing apparatus of claim 7, wherein the offset calculation unit includes bit error rate calculation programming which is stored in the programming memory and is adapted to calculate a bit error rate associated with the decoded signal.

10. The equalizing apparatus of claim 9, wherein the offset calculation unit includes a signal storage memory adapted to store a known signal to be used by the bit error rate calculation programming to calculate the bit error rate associated with the decoded signal.

11. The equalization apparatus of claim 7, wherein the offset calculation unit is further coupled to the tap weight update calculation unit and uses a set of tap weight updates produced the by tap weight update calculation unit to produce the one or more tap weight update offset values.

12. An equalizing apparatus for use in equalizing a received signal, comprising:

an equalizer including a plurality of adjustable tap weights that equalizes the received signal based on values of the tap weights;

a demodulator coupled to the equalizer to produce a demodulated signal;

a zero forcing tap weight update calculation unit coupled to the demodulator and adapted to determine tap weight updates from the demodulated signal for use in adjusting the tap weights during operation of the equalizer, wherein the zero forcing tap weight update calculation unit uses a zero forcing algorithm to calculate the tap weight updates;

an offset memory that stores one or more tap weight update offset values; and

a summer coupled to the tap weight update calculation unit and to the offset memory, wherein the summer is adapted to combine each of the tap weight updates with one of the tap weight update offset values to produce a modified tap weight update and wherein the summer is coupled to the equalizer to provide the modified tap weight updates to the equalizer to adjust the tap weights.

13. The equalizing apparatus of claim 12, further including a decision unit coupled to the demodulator which decodes the demodulated signal and an offset calculation unit coupled to the decision unit and the offset memory, wherein the offset calculation unit includes first programming stored in a programming memory which, when run on a processor, is adapted to compute the one or more tap weight update offset values and to store the one or more tap weight update offset values in the offset memory.

14. A method of controlling the equalization of a received signal, comprising the steps of:

equalizing the received signal using an equalizer that includes a plurality of tap weights;

using an output of the equalizer to determine a set of tap weight updates;

storing one or more tap weight update offset values;

combining the tap weight update offset values with the tap weight updates to produce a set of modified tap weight updates;

using the set of modified tap weight updates to adjust the plurality of tap weights used in the step of equalizing.

15. The method of controlling the equalization of a received signal of claim 14, wherein the step of using an output of the equalizer to determine a set of tap weight updates includes the step of using a zero forcing algorithm.

16. The method of controlling the equalization of a received signal of claim 15, wherein the step of combining the tap weight update offset values with the tap weight updates to produce a set of modified tap weight updates includes the step of solving the zero forcing equalizer algorithm using the one or more tap weight offset values to produced the modified tap weight updates.

17. The method of controlling the equalization of a received signal of claim 14, further comprising the step of determining the tap weight update offset values including the steps of;

(a) setting the tap weights within the equalizer,

(b) transmitting a known signal to the equalizer,

(c) decoding the transmitted known signal after the known signal has been passed through the equalizer;

(d) determining a bit error rate associated with the decoded known signal;

(e) dithering the tap weights within the equalizer, and

(f) repeating steps (b) through (d).

18. The method of controlling the equalization of a received signal of claim 17, further including the steps of selecting one of the sets of tap weights based on the determined bit error rates, storing the selected one of the set of tap weights within the equalizer, again transmitting the known signal to the equalizer, using a zero forcing algorithm to determine a set of tap weight updates and using the determined set of tap weight updates to produce the tap weight update offset values.

19. A method of determining a set of tap weight update offset values to be used in adjusting a set of tap weights within an equalizer, comprising the steps of:

(a) changing the tap weights within the equalizer;

(b) transmitting a known signal to the equalizer;

(c) decoding the transmitted known signal after the known signal has been passed through the equalizer;

(d) determining a bit error rate associated with the decoded known signal;

(e) repeating steps (b) through (d) until a criterion is met;

(f) selecting one of the sets of tap weights based on the criterion;

(g) storing the selected one of the set of tap weights within the equalizer;

(h) again transmitting the known signal to the equalizer;

(i) using a zero forcing algorithm to determine a set of tap weight updates; and

(j) using the determined set of tap weight updates to produce the tap weight update offset values.

20. The method of determining a set of tap weight update offset values of claim 19, wherein the criterion is based on the bit error rate determined in step (d).